

INVENTORY

SPECIES IN GREATEST NEED OF INVENTORY

Over 600 vertebrate fish and wildlife species either live in or migrate through Montana. Because hunters and anglers have historically funded statewide management efforts, the most information exists for the 80 or so animals that are fished or hunted. Although efforts have increased in recent years to pay more attention to all species, there are still many animals that have inadequate, poor quality, or outdated information concerning their current numbers

and distributions.

Many of the following species and groups of species lack the information biologists and managers need to make good decisions about which animals need more resources directed their way in order to conserve them or the habitats they depend on. Over time, collecting information on these animals will benefit fish and wildlife conservation by 1) allowing biologists and managers to have the information necessary to determine the

level of conservation need for all species, 2) increasing our understanding about species that are important or indicator species for the health of fish and wildlife communities, and 3) allowing us to help measure the success we are having at conserving our fish and wildlife using a comprehensive approach.

The following species and groups of species have been identified as those in greatest need of inventory.

GROUPS WITH GREATEST INVENTORY NEEDS

GROUPS	I ¹	I ²	I ³	I ⁴	I ⁵	I ⁶	I ⁷	I ^M	O ¹	O ²
Invertebrate Group	X			X		X				
Crayfish Group	X			X		X				
Mussels Group	X			X		X				
Fish, Prairie Group	X			X		X				
Reptiles Group	X			X		X				
Shorebirds/Waterbirds Group	X			X		X			X	X
Birds, Nocturnal Group	X			X		X			X	
Mammals, Bats Group	X			X		X				
Mammals, Small Group	X			X		X				

SPECIES WITH GREATEST INVENTORY NEEDS

SPECIES	I ¹	I ²	I ³	I ⁴	I ⁵	I ⁶	I ⁷	I ^M	O ¹	O ²
Calico Crayfish	X			X		X		X		X
Virile Crayfish	X			X		X		X		X
A Crayfish	X			X		X		X		X
Signal Crayfish	X			X		X		X		X
Black Sandshell	X			X						
Western Pearlshell	X			X						
Torrent Sculpin	X			X						
Spoonhead Sculpin	X			X						
Shortnose Gar	X				X					
Lake Trout (native lakes)	X					X		X		X
Western Silvery Minnow	X			X		X		X		
Brassy Minnow	X			X		X		X		
Plains Minnow	X			X		X		X		
Pearl Dace	X			X						
Trout-perch	X			X						
Iowa Darter	X			X						
Coeur d' Alene Salamander	X								X	X
Plains Spadefoot	X				X					X
Western Toad								X		
Great Plains Toad	X								X	X

Inventory (I):

- I¹ Observational data is lacking
- I² Observational data is outdated
- I³ Observational data is of poor quality
- I⁴ Statewide inventory needed
- I⁵ Localized inventory needed
- I⁶ Group/Species require targeted survey efforts
- I⁷ Information required to know if a species is a migratory or peripheral species
- I^M Monitoring efforts required

Other (O):

- O¹ Dependant on critical habitats
- O² Opportunity exists for law enforcement to assist with inventory

Tier I Species (bold)

23 Species



SPECIES	I ¹	I ²	I ³	I ⁴	I ⁵	I ⁶	I ⁷	I ^M	O ¹	O ²
Northern Leopard Frog									X	
Snapping Turtle	X			X		X		X		
Spiny Softshell	X			X		X		X		
Northern Alligator Lizard	X			X		X		X		
Western Skink	X			X		X		X		
Rubber Boa	X			X		X		X		
Western Hog-nosed Snake	X			X		X		X		
Milksnake	X			X		X		X	X	
Smooth Greensnake	X				X	X	X			
American Bittern	X			X					X	
Black-crowned Night-heron	X			X					X	
White-faced Ibis	X			X					X	
Northern Goshawk	X					X		X		
Columbia Sharp-tailed Grouse	X					X		X		X
Yellow Rail	X			X			X			
Greater Yellowlegs	X			X			X			
Solitary Sandpiper	X			X			X			
Semipalmated Sandpiper	X			X			X			
Western Sandpiper	X			X			X			
Least Sandpiper	X			X			X			
Baird's Sandpiper	X			X			X			
Pectoral Sandpiper	X			X			X			
Dunlin	X			X			X			
Long-billed Dowitcher	X			X			X			
Arctic Tern	X			X			X			
Black-billed Cuckoo	X			X					X	
Yellow-billed Cuckoo	X			X			X		X	
Barn Owl	X			X			X		X	
Northern Hawk Owl	X			X		X				X
Common Nighthawk	X			X		X		X		X
Common Poorwill	X			X		X		X		
Black Swift	X				X	X		X	X	
Chimney Swift	X			X		X			X	
White-throated Swift	X			X		X		X		
Black-chinned Hummingbird	X			X					X	
Alder Flycatcher	X			X		X		X		

SPECIES	I ¹	I ²	I ³	I ⁴	I ⁵	I ⁶	I ⁷	I ^M	O ¹	O ²
Purple Martin	X			X		X	X			
Canyon Wren	X			X		X		X	X	
Sedge Wren	X			X			X			
American Dipper	X	X		X		X		X		
Blue-gray Gnatcatcher	X				X	X	X			
Eastern Bluebird	X			X			X			
Western Bluebird	X			X		X		X		
Black-and-white Warbler	X			X		X		X	X	
Indigo Bunting	X			X		X		X	X	
Green-tailed Towhee	X			X		X		X	X	
Field Sparrow	X				X	X	X	X		
Le Conte's Sparrow	X			X			X			
Nelson's Sharp-tailed Sparrow	X			X			X			
Black Rosy-finch	X			X			X			
Arctic Shrew	X				X		X			
Northern Myotis	X			X			X			
Eastern Red Bat	X			X			X			
Spotted Bat	X			X		X		X		
Townsend's Big-eared Bat	X			X		X		X	X	
Pallid Bat	X			X			X			
American Pika	X			X		X		X	X	
Eastern Cottontail	X			X			X			
Black-tailed Jackrabbit	X				X	X		X		
Uinta Chipmunk	X				X	X				
Hoary Marmot	X				X	X		X	X	
Uinta Ground Squirrel	X				X	X		X		
Wyoming Ground Squirrel	X				X	X		X		
Northern Flying Squirrel	X				X	X		X		
Idaho Pocket Gopher	X				X	X		X		
Hispid Pocket Mouse	X				X		X			
Water Vole	X			X		X		X		
Sagebrush Vole	X			X		X		X		
Northern Bog Lemming	X				X	X		X	X	
Meadow Jumping Mouse	X			X		X		X		
Common Porcupine	X	X		X		X		X		X
Western Spotted Skunk	X			X			X		X	X

PHOTO CITATIONS

Page #	Description	Photographer
Cover	Blackfeet Indian Reservation	Carl Heilman
	Component I: Focus Areas	
8-9	Montana's Focus Areas Panorama (Bitterroot Range, Bitterroot National Forest)	Carl Heilman
10-11, 12-13, 14-15, 16-17, 18-19, 20-21, 22-23, 24	Intermountain Grassland Panorama (Red Rock Lakes NWR)	Carl Heilman
10	Bitterroot/Frenchtown Valleys	Carl Heilman
10	Riparian Western Conifer	Andrew Jakes
10	Species: See Component III	
11	Central Montana Broad Valleys	Townsend, MT Chamber of Commerce
11	Grassland Complexes	FWP Small Mammal Crew 2004
11	Species: See Component III	
12	Deerlodge Valley	Andrew Jakes
12	Mixed Shrub/Grass Associations	Jeff Henry
12	Species: See Component III	
13	Flathead River Valley	Carl Heilman
13	Wetland: Flathead Lake	Carl Heilman
13	Species: See Component III	
14	Little Belt Foothills	Andrew Jakes
14	Grassland Complexes	Andrew Jakes
14	Species: See Component III	
15	North Tobacco Root Mountains and Foothills	Carl Heilman
15	Grassland Complexes	FWP Small Mammal Crew 2004
15	Species: See Component III	
16	Rocky Mountain Front Foothills	Carl Heilman
16	Mixed Broadleaf Forest: Aspen Gallery	Carl Heilman
16	Species: See Component III	
17	South Elkhorn Mountains	Andrew Jakes
17	Sagebrush	FWP Small Mammal Crew 2004
17	Species: See Component III	
18	Southwest Montana Intermontane Basins and Valleys	Andrew Jakes
18	Sagebrush	Andrew Jakes
18	Species: See Component III	
19	Upper Yellowstone Valley	Jeff Henry
19	Grassland Complexes	FWP Small Mammal Crew 2004
19	Species: See Component III	
20	Big Hole River	Mike Sample
20	Species: See Component III	
21	Bitterroot River	FWP Archives
21	Species: See Component III	
22	Blackfoot River	Mike Sample
22	Species: See Component III	
23	Jefferson River	Andrew Jakes

PHOTO CITATIONS

Page #	Description	Photographer
23	Species: See Component III	
24	Upper Yellowstone River	FWP Archives
24	Species: See Component III	
25, 26-27	Montane Forest Panorama (Kootenai National Forest)	Carl Heilman
25	Mission/Swan Valley and Mountains	Mike Sample
25	Species: See Component III	
26	Lower Clark Fork	FWP Archives
26	Species: See Component III	
27	Middle Clark Fork	FWP Archives
27	Species: See Component III	
28-29, 30-31, 32-33	Plains Grassland & Forest Panorama (Northwestern Great Plains)	Carl Heilman
28	Missouri Coteau	FWP Small Mammal Crew 2005
28	Wetland	FWP Small Mammal Crew 2005
28	Species: See Component III	
29	Montana Sedimentary Plains	Mike Sample
29	Grassland Complexes	FWP Small Mammal Crew 2004
29	Species: See Component III	
30	Lower Missouri River	FWP Small Mammal Crew 2005
30	Species: See Component III	
31	Lower Yellowstone River	Mike Sample
31	Species: See Component III	
32	Powder River	Mike Sample
32	Species: See Component III	
33	Tongue River	Carl Heilman
33	Species: See Component III	
34-35, 36-37, 38-39	Shrub Grassland Panorama (Custer National Forest)	Carl Heilman
34	Bighorn Intermontane Basin	Mike Sample
34	Mixed Shrub/Grass Associations	FWP Small Mammal Crew 2004
34	Species: See Component III	
35	Montana Glaciated Plains	Carl Heilman
35	Grassland Complexes: Yucca	FWP Small Mammal Crew 2004
35	Species: See Component III	
36	Montana Shale Plains	Steve Carson
36	Sagebrush	FWP Small Mammal Crew 2004
36	Species: See Component III	
37	Powder River Basin/Breaks/Scoria Hills	Jeff Henry
37	Mixed Shrub/Grass Associations	Bob Harrington
37	Species: See Component III	
38	Shale Scablands	Scott Hemmer
38	Sagebrush	FWP Small Mammal Crew 2004
38	Species: See Component III	
39	Middle Missouri River	Mike Sample
39	Species: See Component III	

PHOTO CITATIONS

Component II: Community Types

Page #	Description	Photographer	Page #
42-43	Grassland Complexes Panorama	FWP Small Mammal Crew 2005	45
42	Long-billed Curlew: See Component III		45
42	Pronghorn	FWP Archives	46-47
42	Canada Goose	Kristi DuBois	
42	Grizzly Bear: See Component III		46
42	Blue Grama	Larry Allain @USDA-NRCS PLANTS Database	46
42	Missouri Goldenrod	J.S. Peterson @USDA-NRCS PLANTS Database	46
42	Needle & Thread Grass	W.L. Wagner @USDA-NRCS PLANTS Database	46
43	Prairie June Grass	Larry Allain @USDA-NRCS PLANTS Database	46
43	Prickly Pear Cactus	Adam Messer	47
43	Silvery Lupine	Thomas G. Barnes @USDA-NRCS PLANTS Database	
44-45	Mixed Broadleaf Forest Panorama (Tongue River)	Carl Heilman	47
44	Elk	FWP Archives	47
44	Moose	FWP Archives	48-49
44	American Beaver	FWP Archives	48
44	American Dipper	John C. Carlson	48
44	Buffaloberry	USDA-NRCS PLANTS Database/ Herman, D.E. et al. 1996. North Dakota tree handbook. USDA NRCS ND State Soil Conservation Committee; NDSU Extension & Western Area Power Admin., Bismarck, ND.	48
44	Cottonwood	FWP Small Mammal Crew 2005	48
44	Green Ash	USDA-NRCS PLANTS Database/ Herman, D.E. et al. 1996. North Dakota tree handbook. USDA NRCS ND State Soil Conservation Committee; NDSU Extension & Western Area Power Admin., Bismarck, ND.	49
45	Paper Birch	USDA-NRCS (See above listing)	50

PHOTO CITATIONS

Description	Photographer
Quaking Aspen	Carl Heilman
Thimble Berry	Thomas G. Barnes @USDA-NRCS PLANTS Database
Mixed Shrub/Grass Associations Panorama (Wyoming Basin)	Carl Heilman
Black-tailed Prairie Dog: See Component III	
Sagebrush Lizard	FWP Archives
Ferruginous Hawk	MTNHP Archives
Desert Cottontail	Steve Carson
Four-wing Shadscale	Gary A. Monroe @ USDA-NRCS PLANTS Database
Big Bluestem	Jennifer Anderson @ USDA-NRCS PLANTS Database
Idaho Fescue	J.S. Peterson @ USDA-NRCS PLANTS Database
Common Snowberry	J.S. Peterson @ USDA-NRCS PLANTS Database
Smooth Sumac	USDA-NRCS PLANTS Database/ Herman, D.E. et al. 1996. North Dakota tree handbook. USDA NRCS ND State Soil Conservation Committee; NDSU Extension & Western Area Power Admin., Bismarck, ND.
Yucca	Adam Messer
Riparian & Wetland Panorama (National Bison Refuge)	Carl Heilman
Wood Duck	Teaming With Wildlife
Painted Turtle	Kristie DuBois
Pileated Woodpecker	Laura Erickson
Mule Deer	Steve Carson
Riparian Western Broadleaf	Andrew Jakes
Riparian Western Conifer	Andrew Jakes
Riparian Graminoid Forb	Carl Heilman
Riparian Eastern Intermittent Shrub	Andrew Jakes
Wetland Eastern Pothole	FWP Small Mammal Crew 2004
Riparian Western Shrub	Andrew Jakes
Sagebrush & Salt Flats Panorama (Wyoming Basin)	Carl Heilman
Red Fox	FWP Archives
Gopher Snake	MTNHP Archives
Basin Big Sagebrush	Gary A. Monroe @ USDA-NRCS PLANTS Database

PHOTO CITATIONS

Page #	Description	Photographer
50	Black Sagebrush	Gary A. Monroe @ USDA-NRCS PLANTS Database
51	Mountain Big Sagebrush	Gary A. Monroe @ USDA-NRCS PLANTS Database
51	Wyoming Big Sagebrush	Gary A. Monroe @ USDA-NRCS PLANTS Database
52-53	Mountain Streams Panorama (Gardiner River, Yellowstone National Park)	Carl Heilman
52	Yellowstone Cutthroat Trout: See Component III: Species	
52	Bull Trout: See Component III: Species	
52	Westslope Cutthroat Trout: See Component III: Species	
52	Arctic Grayling: See Component III: Species	
52	Alpine Headwater Stream	Dave Stagliano
52	Forested Stream	Carl Heilman
53	Glacial Stream	Carl Heilman
53	Valley Stream	Dave Stagliano
54-55	Prairie Streams Panorama (Northwestern Glaciated Plains)	Carl Heilman
54	Pearl Dace: See Component III: Species	
54	Fatmucket Freshwater Mussel	Dave Stagliano
54	Fat Head Minnow	FWP Archives
54	Emerald Shiner	FWP Archives
54	Great Plains Intermittent Stream	Dave Stagliano
54	Great Plains Prairie Stream	Dave Stagliano
55	Northern Glaciated Plains Intermittent Stream	Dave Stagliano
55	Northern Glaciated Plains Stream	Dave Stagliano

Component III: Species

Page #	Description	Photographer
Invertebrates		
58 (Also on page 22)	Western Pearlshell	Dan Gustafson
58-59	Missouri River, Charles M. Russell NWR Panorama	Carl Heilman
Vertebrates		
Fish:		
59	White Sturgeon	Kootenai Tribe of Idaho
59 (Also on pages 30, 39)	Pallid Sturgeon	NEBRASKAland Magazine/Nebraska Game and Parks Commission Shedd Aquarium/ www.fishphotos.org
59 (Also on pages 31, 33)	Paddlefish	Carl Heilman
60-61	Gallatin National Forest, Snow Mountains Panorama	John White
60 (Also on page 30)	Shortnose Gar	Paul F. Updike
60 (Also on pages 24, 52)	Yellowstone Cutthroat Trout	Paul F. Updike
60 (Also on pages 21, 26, 27, 52)	Westslope Cutthroat Trout	FWP Archives
61	Columbia Basin Redband Trout	Jim Mogen USFWS
61 (Also on pages 21, 22, 26, 27, 52)	Bull Trout	Konrad Schmidt
61 (Also on page 20)	Lake Trout (native lakes)	Carl Heilman
62-63	Powder River, Moorhead SRMA Panorama	Montana Natural Heritage Program
62 (Also on pages 20, 23, 52)	Arctic Grayling	Bob Bramblett
62 (Also on page 32)	Sturgeon Chub	

PHOTO CITATIONS

Page #	Description	Photographer
62 (Also on page 31)	Sicklefin Chub	Paul Gerrity
63 (Also on page 54)	Pearl Dace	Konrad Schmidt
63 (Also on page 39)	Blue Sucker	Konrad Schmidt North Dakota Game & Fish
63	Trout-Perch	Konrad Schmidt
64-65	Gallatin National Forest, Quake Lake Panorama	Carl Heilman
64 (Also on page 23, 33)	Burbot	Konrad Schmidt
64 (Also on page 24, 32)	Sauger	Shedd Aquarium/ www.fishphotos.org
Amphibians:		
65 (Also on page 10)	Coeur D'alene Salamander	Kirwin Werner
65 (Also on pages 11, 12, 15, 18, 25)	Western Toad	MTNHP-Leonard
65 (Also on pages 13, 14, 17, 36, 38)	Northern Leopard Frog	FWP-R. Lott
Reptiles:		
66-67	Northwestern Great Plains Panorama	Carl Heilman
66 (Also on pages 28, 37)	Snapping Turtle	Allen Wiederrich
66 (Also on pages 29, 35)	Spiny Softshell	Ryan Rauscher
66 (Also on pages 16, 38)	Western Hog-nosed Snake	Rodney Schlecht
67 (Also on pages 14, 34, 36)	Milksnake	Bryce Maxell
67 (Also on page 28)	Smooth Greensnake	Geoffrey Hammerson
Birds:		
68-69	Northern Rockies, Ninepipe NWR	Carl Heilman
68 (Also on pages 13, 25)	Common Loon	MTNHP (Copied from <i>MT Outdoors</i>)
68 (Also on pages 16, 18)	Trumpeter Swan	Adam Messer
68 (Also on pages 10, 12)	Harlequin Duck	MTNHP
69 (Also on pages 12, 15, 17, 19)	Bald Eagle	Chuck Carlson
69 (Also on pages 14, 18, 36, 37, 38, 50)	Greater Sage-Grouse	MTNHP (B. Heidel)
69 (Also on page 13)	Columbian Sharp-tailed Grouse	MTNHP (Terres)
70-71	Powder River, Moorhead SRMA Panorama	Carl Heilman
70 (Also on page 28)	Yellow Rail	© Brian E. Small/ www.briansmallphoto.com
70 (Also on page 28)	Whooping Crane	USFWS
70 (Also on page 35)	Piping Plover	Chuck Carlson
71 (Also on pages 11, 29)	Mountain Plover	Chuck Carlson
71 (Also on pages 11, 16, 34, 42)	Long-billed Curlew	Chuck Carlson
71 (Also on pages 29, 35)	Interior Least Tern	MTNHP (Terres)
72-73	Missouri River Panorama	Carl Heilman
72 (Also on pages 12, 37)	Black Tern	MTNHP (Terres)
72 (Also on pages 10, 15, 16)	Flammulated Owl	Gary Stoltz
72 (Also on pages 14, 35, 38)	Burrowing Owl	Audobon Society
73 (Also on pages 13, 17, 19)	Black-backed Woodpecker	Donald M. Jones
73 (Also on page 25)	Olive-sided Flycatcher	© Brian E. Small/ www.briansmallphoto.com
73 (Also on page 28)	Sedge Wren	Bob Gress
74-75	Bitterroot Range, Bitterroot National Forest Panorama	Carl Heilman
74 (Also on page 28)	Nelson's Sharp-tailed Sparrow	North Dakota Fish & Game Craig Birlhle
Mammals:		
75 (Also on pages 34, 37)	Spotted Bat	Merlin Tuttle
75 (Also on pages 12, 15, 17, 38)	Townsend's Big-eared Bat	Kristi DuBois

PHOTO CITATIONS

THE COMPLETE MT CFWCS CD

Page #	Description	Photographer	MONTANA'S COMPREHENSIVE FISH & WILDLIFE CONSERVATION STRATEGY TECHNICAL DOCUMENT
75 (Also on pages 11, 34) 76-77	Pallid Bat Custer National Forest Panorama	Kristi DuBois Carl Heilman	
76 (Also on pages 18, 50)	Pygmy Rabbit	MTNHP (C. Currier)	
76 (Also on page 25)	Hoary Marmot	Steve Carson	
76 (Also on pages 14, 29, 36, 37, 46)	Black-tailed Prairie Dog	Andrew Jakes	
77 (Also on page 34)	White-tailed Prairie Dog	Bob Gress	
77 (Also on page 18)	Great Basin Pocket Mouse	B. Moose Peterson/WRP	
77 (Also on pages 10, 25)	Northern Bog Lemming	MTNHP (Reichel)	
78-79	Great Plains Panorama	Carl Heilman	
78 (Also on page 36)	Meadow Jumping Mouse	Phil Myers animaldiversity.org	
78 (Also on pages 13, 17, 19)	Gray Wolf	USFWS	
78 (Also on page 10, 16, 19, 42)	Grizzly Bear	Chris Servheen	
79 (Also on pages 29, 35)	Black-footed Ferret	Randy Matchett	
79 (Also on pages 11,15, 19)	Canada Lynx	RMRS Lynx Study	
79	American Bison	FWP Archives	
Component IV: Inventory			
Page #	Description	Photographer	
82	Prairie Stream	FWP Archives	
83	Trumpeter Swan Release	CSKT Tribal Wildlife Management Program	
83	Prairie Stream Sampling	FWP Archives	

LITERATURE CITATIONS

For complete citations, please review the complete Comprehensive Fish & Wildlife Conservation Plan found on the CD on the next page of this Executive Summary.

Nelson, W.R. 1968. Reproduction and early life history of sauger (*Stizostedion canadense*) in Lewis and Clark Lake. Transactions of the American Fisheries Society 97:159-166.

Maxell, B.A., G. Hokit, J. Miller, and K. Werner. 2004. Detection of *Batrachochytrium dendrobatidis*, the chytrid fungus associated with global amphibian declines, in Montana amphibians. Unpublished memo. University of Montana, Missoula, MT.

Walburg C.H. 1972. Some factors associated with fluctuation in year-class strength of sauger, Lewis and Clark Lake, South Dakota. Transactions of the American Fisheries Society 101:311-316.

DISCLAIMER

This document was printed at state expense. 2,000 copies were printed at an estimated cost of \$6.32 per copy, for a total estimated cost of \$12,539. Copyright 2006 by Montana Fish, Wildlife and Parks. All rights reserved.

